

What is claimed is:

1. A method for treating a puncture in a vein or artery resulting from a cardiac catheterization procedure in a patient, comprising:

a) applying topically to the patient's skin over a catheter exit site a composition comprising an effective amount of a vasoconstrictor, wherein the vasoconstrictor does not comprise a poly- β -1 \rightarrow 4 N-acetylglucosamine polymer or derivative thereof, and wherein the catheter exit site is contiguous with the catheter puncture in the vein or artery by 1-10 cm; and concurrently

b) applying compression to the punctured vein or artery, wherein a cessation or reduction of blood flow out of the breach or puncture in the vein or artery is achieved in 30%-50% less time than applying compression in conjunction with a topical barrier-forming material without said vasoconstrictor.

2. A method for treating a puncture in a femoral artery resulting from a cardiac catheterization procedure in a patient, comprising:

a) applying topically to the patient's skin over a catheter exit site a composition comprising an effective amount of a vasoconstrictor, wherein the vasoconstrictor does not comprise a poly- β -1 \rightarrow 4 N-acetylglucosamine polymer or derivative thereof, and wherein the catheter exit site is contiguous with the catheter puncture in the femoral artery by 1-10 cm; and concurrently

b) applying compression to the punctured vein or artery, wherein a cessation or reduction of blood flow out of the breach or puncture in the femoral artery is achieved in 30%-50% less time than applying compression in conjunction with a topical barrier-forming material without said vasoconstrictor.

3. A method for inhibiting the formation of hematomas resulting from a cardiac catheterization procedure in a patient, comprising:

a) applying topically to the patient's skin over a catheter exit site contiguous by 1-10 cm with a catheter puncture in a vein or artery a composition comprising an effective amount of a vasoconstrictor, wherein the vasoconstrictor does not comprise

a poly- β -1 \rightarrow 4 N-acetylglucosamine polymer or derivative thereof;

b) concurrently applying compression to the punctured vein or artery; and

c) recording the number of hematomas formed,

wherein the formation of hematomas is inhibited in comparison to applying compression in conjunction with a topical barrier-forming material without said vasoconstrictor.

4. The method of any one of claims 1, 2, or 3 wherein the vasoconstrictor is endothelin, endothelin-1, epinephrine, adrenaline, metaraminol bitartrate, dopamine HCl, isoproterenol HCl, norepinephrine, phenylephrine, serotonin, thromboxane, norepinephrine, prostaglandin, methergine, oxytocin, isoprenaline U-46619, papaverine, yohimbine, visnadin, khellin, bebellin, or nicotinate derivatives.

5. The method of any one of claims 1, 2, or 3, wherein the composition further comprises an anti-fungal or antibacterial agent.

6. The method of any one of claims 1, 2, or 3, wherein the composition further comprises collagen.

7. The method of any one of claims 1, 2, or 3, wherein the composition further comprises a pharmaceutical carrier.

8. The method of any one of claims 1, 2, or 3, wherein the composition is formulated as a gel, solid, liquid, sponge, foam, spray, emulsion, suspension, or solution.

9. The method of any one of claims 1, 2, or 3, wherein the composition further comprises a neutral liquid, neutral gel or neutral solid.

10. The method of claim 9, wherein the composition further comprises a neutral solid and wherein the neutral solid is a gauze.

11. The method of claim 8, wherein the composition is in the form of a coating on a neutral solid.

12. The method of claim 11, wherein the neutral solid is a gauze.

13. The method of any one of claims 1, 2, or 3, wherein the barrier-forming material is a gauze.

14. The method of any one of claims 1, 2, or 3, wherein the composition further comprises a coagulant selected from the group consisting of alpha-2-antiplasmin, alpha-1-antitrypsin, alpha-2-macroglobulin, aminohexanoic acid, aprotinin, a source of Calcium ions, calcium alginate, calcium-sodium alginate, casein Kinase II, chitin, chitosan, collagen, cyanoacrylates, epsilon-aminocaproic acid, Factor XIII, fibrin, fibrin glue, fibrinogen, fibronectin, gelatin, living platelets, methacrylates, PAI-1, PAI-2, plasmin activator inhibitor, plasminogen, platelet agonists, protamine sulfate, prothrombin, an RGD peptide, sphingosine, a sphingosine derivative, thrombin, thromboplastin, and tranexamic acid.

15. The method of any one of claims 1, 2, or 3, wherein the patient is a human.

16. The method of any one of claims 1, 2, or 3, wherein composition applied is a film or membrane.

17. The method of claim 16, wherein the film or membrane comprises a barrier-forming material.

18. The method of any one of claims 1, 2, or 3, wherein composition is formulated as a mat, string, microbead, microsphere, or microfibril.

19. The method of any one of claims 1, 2, or 3, wherein the composition further comprises a biodegradable material.

20. The method of claim 19, wherein the biodegradable material is selected from the group consisting of a polyanionic polysaccharide, alginic acid, collagen, a polypeptide, a polyglycolide, a polylactide, a polycaprolactone, dextran and a copolymer of dextran, a polyglycolide, a polylactide, a polydioxanone, a polyestercarbonate, a polyhydroxyalkonate, and a polycaprolactone and a copolymer thereof.

21. The method of any one of claims 1, 2, or 3, further comprising before step (a) the step of administering to the patient an anticoagulant.

22. The method of claim 21, wherein the anticoagulant is selected from the group consisting of coumadin, heparin, nadroparin, asparin, and a thrombolytic agent.

23. The method of claim 22, wherein the composition further comprises protamine sulfate in an amount effective to neutralize heparin.

24. The method of any one of claims 1, 2, or 3, wherein the artery is the femoral, radial, brachial, or axillary artery.

25. The method of any one of claims 1, 2, or 3, wherein the vein is the femoral, internal jugular, or subclavian vein.

26. The method of any one of claims 1, 2, or 3, wherein the compression is manual compression.

27. The method of any one of claims 1, 2, or 3, wherein the compression is mechanical compression.

28. The method of any one of claims 1, 2, or 3, wherein the compression is applied to the vein or artery proximal of the puncture or breach.

29. The method of any one of claims 1, 2, or 3, wherein the compression is applied at the site of application of the composition.

30. The method of any one of claims 1, 2, or 3, wherein the compression is applied with a compression bandage.

31. The method of any one of claims 1, 2, or 3, further comprising, repeating step (b).

32. The method of claim 31, wherein the rate is at least 10% greater than applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

33. The method of claim 31, wherein the rate is at least 20% greater than applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

34. The method of claim 31, wherein the rate is at least 30% greater than applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

35. The method of claim 31, wherein the rate is at least 40% greater than applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

36. The method of claim 31, wherein the rate is at least 50% greater than applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

37. The method of any one of claims 1, 2, or 3, wherein the vein or artery is breached or punctured by a catheter.

38. The method of any one of claims 1, 2, or 3, wherein the skin wound contiguous with the breach or puncture in the vein or artery is 10, 9, 8, 7, 6, 5, or 4 cm from the puncture in the vein or artery.

39. A method for decreasing the occurrence of localized vascular complications comprising:

- a) applying topically to the patient's skin over a wound contiguous with a breach or puncture in a vein or artery a composition comprising a vasoconstrictor, wherein the vasoconstrictor does not comprise a poly- β -1 \rightarrow 4 N-acetylglucosamine polymer or derivative thereof;
- b) concurrently applying compression to the breached or punctured vein or artery; and
- c) recording the occurrence of localized vascular complications,

wherein an amount of the vasoconstrictor is effective to cause sealing of the breach or puncture in the vein or artery, reducing the rate of localized vascular complications in comparison to applying compression in conjunction with a topical barrier-forming material without a vasoconstrictor.

40. The method of claim 39, wherein the rate is 50% less than applying compression in conjunction with a topical barrier without a vasoconstrictor.

41. The method of claim 39, wherein the vein or artery is breached or punctured by a catheter.